

Nalco Docket No. 7773
Customer No. 49459

REMARKS

Claims 1 to 18 and 20 to 23 are currently pending. Claims 1, 17, 20, and 21 have been amended. Claim 14 has been cancelled. No new matter has been added.

The Office Action rejected Claims 20 to 22 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. The Office Action states, "Claim 20 recites limitation in Claim 19. Since Claim 19 has been cancelled, there is insufficient antecedent basis for this limitation in the claim. Claims 21-22 depend from and thus inherit the indefiniteness of Claim 20." (page 4).

Applicants have amended Claim 20 to depend from Amended Claim 1.

Therefore, Applicants respectfully submit that this rejection has been overcome and respectfully request that this rejection be withdrawn.

The Office Action rejected Claims 1 to 10, 13 to 18, and 20 to 23 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 3,556,932 to Coscia et al. ("Coscia") as evidenced by U.S. Patent No. 6,083,348 to Auhorn et al. ("Auhorn") or U.S. Patent No. 6,315,866 B1 to Sanchez ("Sanchez").

In support of this rejection, the Office Action states:

Coscia discloses adding aldehyde-functionalized vinylamide polymers either to preformed paper or to the fibrous suspension in a papermaking process (Abstract; col. 7, lines 23-31). The polymers contain at least 50 mole percent, preferably greater than 75 mole percent, and up to 99 mole percent vinylamide (nonionic) units, which are exemplified by acrylamide (col. 3, lines 42-60; col. 8, Example 1, lines 9-10 and 73-75). The remainder of the monomer units in the polymer can be ionic monomers or nonionic "spacers" (such as vinyl acetate) (col. 3, lines 46-49 and 58-60). Ionic monomers include cationic, such as diallyldimethyl ammonium chloride (DADMAC, also exemplified in col. 3, lines 42-60; col. 8, Example 1, lines 9-10 and 73-75), and anionic, such as acrylic acid (col. 5, lines 69-72; col. 10, Example 6, lines 45-46). The vinylamide units are partially glyoxylated so that the ratio of glyoxylated to non-glyoxylated units in the range of 0.06 to 0.2 (6-20% glyoxylated) gives the best results (col. 6, lines 59-67).

Office Action at pages 4 to 5.

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Applicants respectfully disagree with and traverse this rejection for at least the reasons below. Claim 1 has been amended to further prosecution of this Application. Support for the amendment can be found in the Specification at least at page 11, lines 8 to 10.

Amended Claim 1 recites a method of enhancing the press section dewatering of a paper sheet on a paper machine. The method includes adding to the paper sheet about 0.05 lb/ton to about 15 lb/ton, based on dry fiber, of one or more aldehyde functionalized polymers. The aldehyde functionalized polymers comprising amino or amido groups wherein greater than 20 mole percent of the amino or amido groups are functionalized by reacting with one or more aldehydes and having a weight average molecular weight of at least about 300,000 g/mole.

Coscia in no way teaches or suggests the aldehyde-functionalized polymers of Amended Claim 1. As noted in the Office Action, Coscia teaches, "a ratio in the range of 0.10-0.20 appears to afford the best wet strength efficiency." (col. 6, lines 66 to 67). Thus, Coscia teaches away from any ratios outside of the range of 0.10 to 0.20 and would not motivate a person of ordinary skill in the art to go beyond a ratio in that range. On the other hand, Amended Claim 1 requires aldehyde-functionalized polymers having greater than 20 mole percent of the amino or amido groups functionalized by reacting with one or more aldehydes.


Therefore, Applicants respectfully submit that Amended Claim 1 (and Claims 2 to 10, 13 to 18, and 20 to 23 that depend therefrom) are patentably distinct over Coscia as evidenced by Auhorn or Sanchez and respectfully request that this rejection be withdrawn.

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CONCLUSION

In view of the foregoing amendment and remarks, Applicants respectfully request withdrawal of the rejections under 35 U.S.C. §§ 112, second paragraph, and 103(a). Applicants respectfully assert that all pending claims in this Application are in condition for allowance and earnestly solicit early notice to this effect.

Respectfully Submitted,


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